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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/568,066 | 02/13/2006 | Wataru Iijima | 286003US0PCT | 7464 |
| 22850 | 7590 | 02/20/2009 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. | | | HINES, LATOSHA D | |
| 1940 DUKE STREET | | | ART UNIT | PAPER NUMBER |
| ALEXANDRIA, VA 22314 | | | 1797 | |
| NOTIFICATION DATE | | DELIVERY MODE | | |
| 02/20/2009 | | ELECTRONIC | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | |
|------------------------------|--------------------------------------|--------------------------------------|
| Office Action Summary | Application No. 10/568,066 | Applicant(s) IIJIMA ET AL. |
| | Examiner LATOSHA HINES | Art Unit 1797 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 February 2006.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-6 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application
6) Other: _____

DETAILED ACTION

1. This is the second Office action based on the 10/568066 application filed on February 13, 2006.
2. The rejection under 35 USC 102 anticipated by SAKA (US 2006/0025620) and 35 USC 103 unpatentable over SAKA (US 2006/0025620) are withdrawn.
3. Claims 1-6 are pending and have been fully considered.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over TSUTO et al. (US 2001/0053860).

TSUTO et al. discloses a process for preparing or producing a fatty acid alkyl ester which can be effectively used as a fuel oil for **diesel** engines, through a **trans-esterification** of triglyceride contained in a variety of **fats and oils** including plant oils such as rape oil, sesame oil, and animal oils with alcohol (column 1-2). The reaction between the **fat** and oil and the alcohol is performed in an atmosphere in which the alcohol is in super-critical state in the absence of metal alkali and acid **catalysts** (column 2 lines 40-60). The **trans-esterification** with **methanol** is performed in a **tube** reactor (meets the limitations of claim 5)

through which the fat and oil and the alcohol are passed continuously to react with each other.

It has been known that a fatty acid alkyl-ester could be obtained by subjecting major ingredients of fats and oils such as monoglyceride, diglyceride and triglyceride, to a trans-esterification with an alkyl alcohol (column 1 lines 29-40). TSTUO et al. gives various examples of the fats and oils being used in the composition including methyl esters (column 5-6). To cause the fats and oils and the alcohol to react with each other, the conditions of high temperatures and high pressures must be met to suppress the thermal decomposition of **glycerin** or the like (column 4 lines 6-37). As stated by applicant acceptable conditions for meeting the claimed language relevant to glycerin where "glycerin is not generated" is for example, cases where "the generated glycerin is not separated from the bio-diesel fuel" include but are not limited to glycerin generated is so small that the glycerin is not separated from the bio-diesel fuel, which can be found in applicant's specification on page 6.

In particular, the reaction temperature is usually within the range of **250 to 300°C** and the pressure range is generally within **5 to 13 MPa**. In, particular under a condition of higher than **250°C**, it is essential to control the reaction time **within 30 minutes**, preferably 5 minutes (column 4 lines 26-37). TSUTO et al. does disclose the claimed invention except for the specific temperatures and pressures stated by applicant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use higher

temperatures and pressures because the higher the temperature of the reaction the amount of pressure required would automatically be higher to mirror the high temperature amount. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

The suitable molar ratio of the alcohol to triglyceride in this process is **1.2 to 50 times**, more preferably 1.2 to 30 times, as much as the amount stoichiometrically required for trans-esterification of the triglyceride (column 4 lines 55-65).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LATOSHA HINES whose telephone number is 571-270-5551. The examiner can normally be reached on Monday thru Thursday from 8 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LATOSHA HINES/
Examiner, Art Unit 1797

/Cephia D. Toomer/
Primary Examiner, Art Unit 1797